

# The American Midland Naturalist

PUBLISHED BI-MONTHLY BY THE UNIVERSITY  
OF NOTRE DAME, NOTRE DAME, INDIANA

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VOL. V.

MAY, 1917.

NO. 3.

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## ENUMERANTUR PLANTAE DAKOTAE SEPTENTRIONALIS VASCULARES.—XII.

ENUMERAVIT J. LUNELL.

### The Vascular Plants of North Dakota.—XII.

With Notes by J. Lunell.

1084. *Aster paniculatus* Lam. Encycl. I: 306. (1783).

Devils Lake, Dunsieith, Pleasant Lake.

1085. *Aster paniculatus* var. *polychrous* Lunell, var. nov.

Leaves narrowly lanceolate, rays purplish of many different shades.

This form grows on low prairie, while the species prefers protected situations. Leeds.

1086. *Aster lautus* Lunell in Am. Mid. Nat. Vol. II: 146. (1911).

Leeds.

1087. *Aster lautus* var. *prionoides* Lunell, var. nov.

Stem leaves serrulate (the species has entire leaves, and in many hundreds of plants examined I have noticed only a few with serrulate margins.) Leaflets of the inflorescence often less numerous and less reduced in size. Leeds.

1088. *Aster laetevirens* Greene, Pittonia IV: 219. (1900).

Leeds.

1089. *Aster clivorum* Lunell, sp. nov.

Caulis gracilis, 4-5 dm. altus, simplex. Folia ampla, amplissimorum 12x3.5 cm. mensura, apicem versus sensim diminuta, tenuia, acuminata, sessilia, denticulata. Inflorescentiam capitulorum paucorum non vidi, sumo autem negari non posse. Specimen typi capitulum habet solitarium quod propemodum sessile est, disco 1 cm. alto latoque. Involucris trium laxi squamae marginibus albis apicibusque viridibus praeditae. Flores radiati caerulei.

Stem slender, 4-5 dm. high, simple, with minute leaves in three of the upper axils indicating future branching if an extension of the season would permit it. Leaves large, the maximum size being 12x3.5 cm., gradually diminished toward the top, thin, acuminate, sessile, denticulate. I accept as undeniable that the inflorescence has a few heads, though I have not seen them. The type specimen has a solitary head, which is almost sessile, with the disk 1 cm. high and wide. Involucre lax, with 3 rows of linear, white-margined, green-tipped bracts. Rays blue.

This species, with its leaves resembling an exuberant form of *A. paniculatus*, and its head in size and color suggestive of *A. salicifolius*, was collected by the writer in the foot-hills of the Turtle Mountains, near Dunsieith, Rolette County, September 3, 1911.

1090. *Aster Jacobaeus* Lunell, sp. nov.

Caulis gracilis, 4-8 dm. altus, simplicior vel apicem versus ramis paucis brevibus convergentibus, 1-8 cm. longis gaudens, striatus, paene glabratus, apice excepto lineis pilosis ferme oblitteratis. Folia tenuia, firmiora, parva, acuminata, sessilia, caulina marginibus subtus integris, superne denticulatis vel integris, 2-7 cm. longa, 7-10 mm. lata, ramorum integra, 18 mm. longa, 5 mm. lata. Inflorescentia anguste racemosa, 0.5-3 dm. alta, capitulis infimis solitariis, in axillis foliorum vel sessilibus vel ramis brevibus sustentis, apicem vero versus capitulis 2-6 fere sessilibus vel breviter pedicellatis, unoquoque in axillo folioli sui solitario. Discus capituli 6-8 mm. altus latusque. Involucri serierum trium laxi squamae acutae, apicibus viridibus praeditae. Flores radiati albi vel pallide rubicundi, vel obscure—pallide violaceo-purpurei.

Stem slender, 4-8 dm. high, quite simple or with a few convergent short branches, 1-8 cm. long, toward the top, striate, almost glabrate, the hairy lines quite obliterated except at the upper end. Leaves thin but firm, rather small, acuminate, sessile, on the stem with the lower margin entire and the upper either denticulate or entire, 2-7 cm. long, 7-10 mm. wide, and on the branches 18 mm. long, 5 mm. wide, entire along the margins. Inflorescence narrowly racemose, 0.5-3 dm. high, with the lowest heads solitary, either sessile or on short branches in the leaf-axils, and toward the top on the branches 2-6 heads almost sessile or on short pedicels, each solitary in the axil of its leaflet. Disk of the head 6-8 mm. high and wide. Involucre lax, with three rows of linear, acute,

green-tipped bracts. Rays white or pale pink, or dark to pale violet purple.

Growing in the muddy soil of low meadows on the border of James River (hence the species name), near Jamestown, Stutsman County, where it was collected by the writer on August 24, 1913. Found in similar surface conditions at Leeds on Sept 3, 1916.

1091. *Aster durus* Lunell in Am. Mid. Nat. Vol. II: 148. (1911).

Leeds, Butte, Pleasant Lake.

1092. *Aster ptarmicoides* (Nees) T. & G. Fl. N. A. 2: 160. (1841).

*Doellingeria ptarmicoides* Nees, Gen. & Sp. Ast. 183. (1832)

Leeds, Butte, Minot.

1093. *Aster multiflorus* Ait. Hort. Kew 3: 203. (1789).

Leeds, Butte; Kulm (Brenckle).

1094. *Aster polycephalus* Rydb. Bull. Torr. Bot. Club. 33: 153. (1906).

Leeds.

1095. *Aster commutatus* (T. & G.) A. Gray, Syn. Fl. I: part 2. 125. (1841).

*Aster multiflorus commutatus* Torr. & Gray, Fl. N. A. A. 2: 125. (1841).

Leeds, Butte.

1096. *Aster exiguus* (Fernald) Rydb. Bull. Torr. Bot. Club. 28: 505. (1901).

Butte.

1097. *Aster crassulus* Rydb. Bull. Torr. Bot. Club. 28: 504. (1901).

Leeds, Butte; Fargo (Cl. Waldron).

1098. *Aster pauciflorus* Nutt. Gen. Pl. 2: 154. (1818).

"Margins of saline springs, near Fort Mandan on the Missouri," Cherry Creek, Shafer, McKenzie County (O. A. Stevens). *BRACHYACTIS* Ledeb. Fl. Ross. II: 495. (1846).

1099. *Brachyactis angustus* (T. & G.). Britt. Ill. A. III: 383. (1893).

*Aster angustus* T. & G. Fl. N. A. 2: 162. (1842).

Leeds, Butte.

*MACHAERANTHERA* Nees, Gen. & Sp. Ast. 224. (1832).

1100. *Machaeranthra canescens* (Nutt.) Gray, Pl. Wright I: 89. (1852).

Williston (W. B. Bell.)

*TESSENIA* Bubani, Nuov. Giorn. Bot. It. V: 318 (1873), also Fl. Pyr. 2: 263. (1900). Name in honor of Tessen, a Chinese emperor who in 1200 A. C. had a splendid botanical garden. If Tessen the botanist deserved to be honored the name is just as good, as it would be bad if dedicated to the imperial Mecenass. Botanical work and research, not material gifts, should inspire a name.

*Panios* Adans. Fam. Pl. 2: 124 & 587, (1763), rejected by Bubani, as applied to various heterogeneous types

*Erigeron auctorum*, not Diosc., nor. Plin. = *Senecio vulgaris* of the ancients.

1101. *Tessenia aspera* (Nutt.) Lunell.

*Erigeron asper* Nutt. Gen. 2: 147. (1818).

Kulm (Brenckle). "Plains of the Missouri."

1102. *Tessenia aspera* var. *appressa* Lunell, comb. nov.

*Erigeron asper* var. *appressus* Lunell in Am. Midl. Nat. Vol.

III: 3. (1913).

Dickinson (Cl. Waldron).

1103. *Tessenia aspera* var. *subintegra* Lunell, comb. nov.

*Erigeron asper* var. *subinteger* Lunell in Am. Midl. Nat. Vol.

III: 143. (1913).

Kulm (Brenckle); Towner.

1104. *Tessenia abruptorum* Lunell, comb. nov.

*Erigeron abruptorum* Lunell in Am. Midl. Nat. Vol. III: 3. (1913).

Butte, Towner.

1105. *Tessenia multicolor* Lunell, comb. nov.

*Erigeron multicolor* Lunell, in Am. Midl. Nat. Vol. II: 255.

(1912).

Leeds, Butte.

1106. *Tessenia oxyodonta* Lunell, nov. comb.

*Erigeron oxyodontus* Lunell, in Am. Midl. Nat. Vol. III:

3. (1913).

Butte.

1107. *Tessenia oligodonta* Lunell, nov. comb.

*Erigeron oligodontus* Lunell, in A. Midl. Nat. Vol. III: 4. (1913).

Butte.

1108. *Tessenia oligodonta* var. *acuminata* Lunell, nov. comb.

*Erigeron oligodontus* var. *acuminatus* Lunell, in Am. Midl.

Nat. Vol. III: 4. (1913).

Butte.

1109. *Tessenia oligodonta* var. *roseata* Lunell, var. nov.  
Rays of a vivid rose color. Leeds, Butte.
1110. *Tessenia procera* Lunell, nov. comb.  
*Erigeron procerus* Lunell, in Am. Midl. Nat. Vol. III: 5. (1913).  
Butte.
1111. *Tessenia anodonta* Lunell, nov. comb.  
*Erigeron anodontus* Lunell, in Am. Midl. Nat. Vol. III: 6.  
(1913).  
Leeds, Butte.
1112. *Tessenia tarda* Lunell, nov. comb.  
*Erigeron tardus* Lunell, in Am. Midl. Nat. Vol. III: 344. (1914).  
York.
1113. *Tessenia glabella* (Nutt.) Lunell, nov. comb.  
*Erigeron glabellus* Nutt. Gen. Pl. II: 147. (1818).  
"Plains of the Missouri (around Fort Mandan)." Leeds, Butte.
1114. *Tessenia glabella* var. *subdiscoidea* Lunell, var. nov.  
Rays almost absent. Leeds.
1115. *Tessenia pumila* (Nutt.) Lunell, nov. comb.  
*Erigeron pumilus* Nutt. Gen. Pl. II: 147. (1818).  
Towner, Minot; Turtle Lake (O. A. Stevens).
1116. *Tessenia philadelphica* (Linn.) Lunell, nov. comb.  
*Erigeron philadelphicus* Linn. Sp. Pl. 863. (1753).  
Leeds, Peninsula of Lake Ibsen, Turtle Mountains.
1117. *Tessenia philadelphica* var. *acaulescens* Lunell, var.  
nov.  
Plant acaulescent up to the inflorescence, which commences  
2-4 inches from the lower end of the stem. Dry bottom of Lake  
Ibsen.
1118. *Tessenia subcostata* Lunell, nov. comb.  
*Erigeron subcostatus* Lunell, in Am. Mid. Nat. Vol. III., 5.  
(1913).  
Dickinson (Cl. Waldron).
1119. *Tessenia obscura* Lunell, nov. comb.  
*Erigeron obscurus* Lunell, in Am. Mid. Nat., Vol. II: 256.  
(1912).  
Leeds, Devils Lake.
1120. *Tessenia ramosa* (Walt.) Lunell, nov. comb.  
*Erigeron ramosus* (Walt.) B. S. P. Prel. Cat. N. Y. 27. (1788)  
*Doronicum ramosum* Walt. Fl. Car. 205. (1788).  
Kulm (Brenckle.)

1121. *Tessenia racemosa* (Nutt.) Lunell, nov. comb.

*Erigeron racemosus* Nutt. Trans. Am. Phil. Soc. 7: 312. (1841).  
Leeds, Devils Lake.

1122. *Tessenia racemosa* var. *simplicissima* Lunell, var. nov.

Stem at the end of the season 40 cm. long, very slender, simple,  
bearing 1-4 heads.

Turtle Mountains; St. John.

1123. *Tessenia racemosa* var. *arcuata* Lunell, var. nov.

Branching freely from the base; the branches arcuate. Dry  
bottom of Lake Ibsen.

*LEPTILON* Raf. Am. Month. Mag. 2: 268. (1818).

1124. *Leptilon canadense* (Linn.) Britt. in Britt. & Br.  
Ill. Fl. 3: 391. (1898).

*Erigeron canadensis* Linn. Sp. Pl. 863. (1753).

Leeds, Butte; Kulm (Brenckle).

*DOELLINGERIA* Nees, Gen. & Sp. Ast. 176. (1832).

1125. *Doellingeria umbellata pubens* (A. Gray) Britt. in  
Britt. & Br. Ill. Fl. 3: 392. (1898).

*Aster umbellatus* var. *pubens* A. Gray, Syn. Fl. 1: 197. (1884).

Turtle Mountains, Pleasant Lake.

*ANTENNARIA* Gaertn. Fruct. & Sem. 2: 410, pl. 167. (1791);  
R. Br., acc. to Bubani.

#### SEXUAL KEY.

Group I. Both staminate and pistillate flowers found. These grow either  
promiscue or in separate clumps, but in their own immediate proximity:  
*A. angustiarum*, *A. Lunellii*, *A. microphylla*.

Group II. Both staminate and pistillate flowers found, but each kind is  
growing alone, in localities widely separated from the other:  
*A. chelonica*.

Group III. Only staminate flowers found: *A. microphylla solstitialis*.

Group IV. Only pistillate flowers found: *A. aprica*, *A. aureola*, *A. aureola*  
*roseata*, *A. oxyphylla*.

#### ANALYTICAL KEY.

I. Heads 8-12 mm. high.

A. Mature leaves glabrous above.

- 1) Fertile plants tall, sterile low. Stolons elongated.....*A. chelonica*
- 2) Fertile and sterile plant of equal length. Stolons 1-2 as  
long as the stem.....*A. angustiarum*

B. Leaves small, permanently hoary pubescent above, at least  
toward the margins.....*A. Lunellii*

C. Leaves permanently tomentose on both sides.

- 1) Low, with obtuse pistillate bracts.....*A. aprica*

- 2) Middle sized, with acute, white, gold tinted pistillate bracts.....*A. aureola*
  - 3) Middle-sized, with acute, rose-colored pistillate bracts  
.....*A. aureola roseata*
  - 4) Tall, the outermost series of pistillate bracts broad,  
obtuse, the inner narrower, acute.....*A. oxyphylla*
- II. Heads 5-8 mm. high.  
Leaves small, finely and appressedly silky tomentose.
- 1) Heads in an open corymb, pedunculated. Scarcity of  
staminate plants. Tall.....*A. microphylla*
  - 2) Heads in glomerate, capitate clusters. Absence of pistil-  
late plants. Low.....*A. microphylla* var. *solstitialis*
1126. *Antennaria chelonica* Lunell in Am. Mid. Nat. Vol.  
II: 126. (1911).  
St. John.
1127. *Antennaria angustiarum* Lunell in Am. Mid. Nat. Vol.  
III: 141. (1913).  
Butte.
1128. *Antennaria Lunellii* Greene in Am. Mid. Nat. Vol.  
II: 81. (1911).  
Leeds.
1129. *Antennaria aprica* Greene, Pittonia 3: 282. (1898).  
Leeds.
1130. *Antennaria aureola* Lunell in Am. Mid. Nat. Vol.  
II: 288. (1912).  
Butte, Pleasant Lake, Towner, Dunsieith, Peninsula of Lake  
Ibsen, Minnewaukan.
1131. *Antennaria aureola* var. *roseata* Lunell.  
*Antennaria aprica* var. *rosea* Lunell in Bull. Leeds Herb. No. 2,  
p. 8. (1908).  
Towner.
1132. *Antennaria oxyphylla* Greene Pittonia 4: 284. (1901).  
Dickinson (Bergman, Cl. Waldron).
1133. *Antennaria microphylla* Rydb. Bull. Torr. Bot. Club.  
24: 303. (1897).  
Leeds, Peninsula of Lake Ibsen, Devils Lake, Pleasant Lake,  
Turtle Mountains.
1134. *Antennaria microphylla* var. *solstitialis* Lunell.  
*Antennaria solstitialis* Lunell in Proc. Biol. Soc. Wash. Vol. XX:  
39. (1907).  
Leeds.

*RESINOCAULON* (Gr. *ρητινη* resin, *καυλός* stem) Lunell, gen. nov.

*Silphium* Diosc., Plin. = *Laserpitium*. Ruel. de Diosc. III: 264. (1547) under *Laserpitium* says: "Caulem aliqui silphion. . . vocavere." Plinius, Hist. (1532) page 349, line 5: "Ab his proximum dicetur auctoritate clarissimum laserpitium, quod Graeci silphion vocant, in Cyrenaica provincia repertum."—Bubani, Fl. Pyr. II: 398, line 23: "*Silphium* L. cuilibet curae commendamus."—*Silphium* Linn. Gen. (1737). Hort. Cliff. (1737).

*Asteriscus* Tour. Elém. 308. (1694), Dill. Hort. Elth. 42.. (1732), not *Asteriscus* Dod. Herb. 474. (1618). = *Aster atticus* Fuchs.

1135. *Resinocaulon perfoliatum* (Linn.) Lunell.

*Silphium perfoliatum* Linn. Sp. Pl. ed. 2., 1301. (1763).

Fargo (O. A. Stevens).

*HELIOPSIS* Pers. Syn. 2: 473. (1807).

1136. *Heliopsis scabra* Dunal, Mem. Mus. Paris, 5: 56, pl. 4. (1819).

Devils Lake, Turtle Mountains, Leeds.

*OBELISCOTHECA* Vail. Act. 426. (1720). A name, not very beautiful, almost sesquipedalian!

*Rudbeckia* Linn. Gen. no. 980, antedated by Houston, Mss. who used it for *Conocarpus*.

1137. *Obeliscotheca flava* (Moore) Nwd. & Lll.

*Rudbeckia flava* Moore, in Greene Pittonia 4: 179. (1900).

Leeds, Butte, Pleasant Lake, Turtle Mountains.

1138. *Obeliscotheca flava perbracteata* (Lunell) Nwd. & Lll

*Rudbeckia flava perbracteata* Lunell in Am. Mid. Nat. Vol. II:

157. (1912).

Leeds, Butte.

1139. *Obeliscotheca ampla* (A. Nels.) Nwd. & Lll.

*Rudbeckia ampla* A. Nels. in Bull. Torr. Bot. Club 28: 234.

(1901).

Turtle Mountains, Pleasant Lake:

*RATIBIDA* Raf. Am. Month. Mag. 2: 268. (1818).

1140. *Ratibida columnifera* (Nutt.) Woot. & Standl. Fl. New Mexico. 706. (1915.)

*Rudbeckia columnifera* Nutt. Fraser's Cat. 75. (1813).

*Rudbeckia columnaris* Pursh, Fl. Am. Sept. 575. (1814).

Leeds.



1141. *Ratibida columnifera pulcherrima* (DC.) Woot. & Standl l. c.

*Obeliscaria pulcherrima* DC. Prodr. 5: 559. (1836).

Leeds, Butte, Bottineau.

*BRAUNERIA* Necker, Elém. I: 17. (1790).

*Echinacea* Moench. Meth. 591. (1794).

1142. *Brauneria pallida* (Nutt.) Britt. Mem. Torr. Bot. Club 5:333. (1894.)

*Rudbeckia pallida* Nutt. Journ. Acad. Phila. 7: 77. (1834).

*Echinacea angustifolia* DC. Prodr. 5: 554 (1836).

Narrows, Towner, Leeds.

*HELIANTHUS* Linn. Gen. n. 979.

#### ANALYTICAL KEY.

#### I. Annuals. Disk dark.

- A. Leaves dentate; bracts ovate or obovate, acuminate, hispid-ciliate.....*H. annuus*

- A. Leaves entire, or almost so; bracts lanceolate, canescent *H. petiolaris*

#### II. Perennials.

- A. Disk dark brown or purple.....*H. subrhomboideus*

- A. Disk yellow or light brown.

- B. Leaves lanceolate, 3-8 times as long as wide, acuminate.

- C. Leaves conduplicate.

- D. Rays 15-30.....*H. Maximiliani*

- D. Besides these, a number of additional ray-like flowers emanates from the disk.....*H. Maximiliani* var. *iubaris* n. var

- C. Leaves flat, subentire or denticulate.....*H. Nuttallii*

- B. Leaves ovate, ovate-lanceolate or oblong, acute, short-petioled.

- C. Leaves not verticillate.

- D. Leaves ovate-lanceolate, 2.5-3 times longer than wide.....*H. apricus*

- D. Leaves oblong-ovate, quite large, twice as long as wide.

- E. Leaves smooth beneath.....*H. nitidus*

- E. Leaves scabrous beneath.....*H. nitidus* var. *camporum*

- C. Leaves verticillate in threes.....*H. nitidus* var. *trifolius* n. var.

- B. Leaves ovate, acuminate, large, long-petioled, serrate, 3.5-4 times longer than wide.

- C. Leaves soft-pubescent beneath.....*H. tuberosus*

- C. Leaves white-canescant beneath.....*H. tuberosus subcanescens*

1143. *Helianthus annuus* Linn. Sp. Pl. 904. (1753).

Leeds, Bismarck.

1144. *Helianthus petiolaris* Nutt. Journ. Acad. Phila. 2:

115. (1821).

Devils Lake, Pleasant Lake; Denbigh (Bergman).

1145. *Helianthus subrhomboideus* Rydb. Flora of Montana  
419. (1900).  
Leeds, Butte.
1146. *Helianthus Maximiliani* Schrad. Ind. Sem. Hort.  
Goett. (1835).  
Leeds, Devils Lake, Turtle Mountains.
1147. *Helianthus Maximiliani* var. *iubaris* Lunell, var. nov.  
For description see Key. Leeds.
1148. *Helianthus Nuttallii* T. & G. Fl. N. A. 2: 324. (1842).  
Willow City, Towner.
1149. *Helianthus apricus* Lunell in Am. Mid. Nat. Vol. I:  
237. (1910).  
Leeds, Butte, Towner.
1150. *Helianthus nitidus* Lunell in Am. Mid. Nat. Vol. I:  
236. (1910).  
Butte.
1151. *Helianthus nitidus* var. *camporum* Lunell in Am. Mid.  
Nat. Vol. I: 237. (1910).  
Leeds. The change proposed in Am. Mid. Nat. Vol. II: 127.  
(1911) is herewith retracted.
1152. *Helianthus nitidus* var. *trifolius* Lunell, var. nov.  
For description see Key. Butte.
1153. *Helianthus tuberosus* Linn. Sp. Pl. 905. (1753).  
Peninsula of Lake Ibsen, Turtle Mountains.
1154. *Helianthus tuberosus subcanescens* A. Gray, Syn.  
Fl. I. Part 2: 280. (1884).  
Pleasant Lake, Bismarck.
- COREOPSIS* Linn. Gen. n. 981; T. & G. Fl. II: 338 (1842).
1155. *Coreopsis tinctoria* Nutt. Journ. Acad. Phila. 2: 114.  
(1821).  
Morton County (W. B. Bell).
- BIDENS* Caesalpinus, De Plantis Bk. 12, ch. 17. (1583);  
Tour. Inst. 462. (1700); Linn. Gen. n. 932.
1156. *Bidens glaucescens* Greene, Pittonia 4: 258. (1901)  
Leeds, Butte, Peninsula of Lake Ibsen, Pleasant Lake, Turtle  
Mountains; Logan Co. (Brenckle).
1157. *Bidens acuta* (Wiegand) Britton, Man. 1001. (1901).  
*Bidens comosa acuta* Wiegand.  
Leeds, Towner.

1158. *Bidens frondosa* Linn. Sp. Pl. 832. (1753).  
Pleasant Lake; Logan Co.: Beaver Lake (Brenckle).
1159. *Bidens vulgata* Greene, Pittonia 4: 72. (1901).  
Leeds, Peninsula of Lake Ibsen.
1160. *Bidens vulgata* var. *puberula* (Wiegand) Greene.  
In a swamp, Leeds.
1161. *Bidens vulgata* var. *schizantha* Lunell, var. nov.  
Leaves bipinnately 3-7 divided, except the 3 upper leaflets,  
which are undivided; petioles widened at base.  
In the western part of the state.
- MADIA* Molina Chil.; Cav. Ic. III: 50, t. 298 (1794).
1162. *Madia glomerata* Hook. Fl. Bor. Am. 2: 24. (1834).  
Leeds (extinct); Williams Co.: Spring Brook (O. A. Stevens).  
*GALINSOGA* R. & P. Prodr. Fl. Per. 110, pl. 24. (1794).
1163. *Galinsoga parviflora* Cav. Icon. 3: 41, pl. 281. (1794).  
Fargo (Cl. Waldron).
- HYMENOPAPPUS* L'Her. Diss. (1788).
1164. *Hymenopappus filifolius* Hook. Fl. Bor. Am. I: 317.  
(1833).  
Morton County (W. B. Bell).
- BAHIA* Lag. Gen. & Sp. Nov. 30. (1816).
1165. *Bahia oppositifolia* Nutt.; T. & G. Fl. N. A. 2: 376.  
(1842).  
*Trichophyllum oppositifolium* Nutt. Gen. Pl. 2: 167. (1818).  
*Picradeniopsis oppositifolia* (Nutt.) Rydb. Britt. Man. 1008.  
(1901).  
"On denudated sterile hills, near Fort Mandan;" Morton Co.  
(W. B. Bell).
- TETRANEURIS* Greene, Pittonia III: 265. (1898).
1166. *Tetraneuris simplex* A. Nels. Bot. Gaz. 127. (1899).  
Belfield (Bergman).
- HYMENOXYS* Cass. Dict. Sc. Nat. LV.: 278. (1828).
1167. *Hymenoxys pumila* (Greene).  
*Picradenia pumila* Greene, Pittonia III: 271. (1898).  
Belfield (Bergman).
1168. *Hymenoxys Richardsonii* (Hook.) Ckll. Bull. Torr.  
Bot. Club. 31: 471. (1904).  
Dickinson (Cl. Waldron).
- HELENIASTRUM* Vaillant. Act. 406. (1720).

*Inula* Virgilius, Plinius, etc. *Helenium* Dodonaeus Pempt. 344. (1583), Morison, Vaillant, Boerhave, Bauhin, was used for what Caesalpinus calls *Enula* = *Inula Helenium* Linn., which no doubt is = *Helenium vulgare* Dod. This eliminates *Helenium* as a synonym and validates *Heleniastrum*, as not built on a pre-existing genus name.

1169. ***Heleniastrum montanum*** (Nutt.) Nwd & Lll.

*Helenium montanum* Nutt. Trans. Am. Phil. Soc. n. ser. 7: 384. (1841).

Leeds.

*GAILLARDIA* Foug. Mem. Acad. Sci. Paris 1786: 5. (1786).

1170. ***Gaillardia aristata*** Pursh, Fl. Am. Sept. 573. (1814).

Leeds, Butte; Kulm (Brenckle).

1171. ***Gaillardia aristata* var. *foliacea*** Lunell in Am. Midl. Nat. Vol. II: 122. (1911.)

Leeds, Butte.

***BOEBERA*** Willd. Spec Pl. III: 2125. (1803).

*Dysodia* Cav. Ann. Cient. Nat. 6: 334. (1801-2).

1172. ***Boebera papposa*** Rydb. in Britt. Man. 1012. (1901).

*Tagetes papposa* Vent. Pl. Jard. Cels. 36, pl. 36. (1800).

*Dysodia chrysanthemoides* Lag. Gen. & Sp. Nov. 29. (1816).

*Dysodia papposa* Hitch. Trans. Acad. St. Louis 5: 503. (1891).

Morton County. (W. B. Bell); Fort-Lincoln near Bismarck (Brenckle).

***ACHILLAEA*** Diosc. 4: 36 (*Αχιλλαιος*).

1173. ***Achillaea Ptarmica*** Linn. Sp. Pl. 898. (1753).

In an old garden. Leeds.

1174. ***Achillaea lanulosa*** Nutt. Journ. Acad. Phila. 7: 36. (1834).

Leeds, Butte, Devils Lake, Pingree, Bottineau.

1175. ***Achillaea lanulosa* var. *arachnoidea*** Lunell in Am. Mid. Nat. Vol. I: 235. (1910).

St. John, Peninsula of Lake Ibsen.

1176. ***Achillaea multiflora*** Hook. in Am. Mid. Nat. Vol. II: 296. (1912).

St. John.

***ORMENIS*** Cass. Dict. Sc. Nat. XXIX.: 180. (1823). *Ανθεμιον* Theophr. 7. 9. *Leucanthemum* Plin. 22, 21.

1177. ***Ormenis Cotula*** Hippocrates? Herbariorum. Diosc. 3: 154.

Leeds, Pleasant Lake, St. John.

*PONTIA* Bubani, Fl. Pyr. II: 218. (1890).

*Chrysanthemum* (χρυσάνθεμον) Diosc. 4. 58, for which Daubeny accredits *Chr. coronarium* as the type, now that certain other *Chrysanthema* were called by Diosc. and others *Buphthalmum*, etc., would not militate against the fact that *Chr.* is the name of the genus, since that is what Diosc. called the type plant. As it is considered desirable here to segregate the *Leucanthemum* group, this latter name is not available, because it was applied by Plinius to *Anthemis thia*.—*Pontia* Bubani l. c. = *Leucanthemum* Tournef., not Plinius 22. 21

1178. *Pontia vulgaris* (Brunfels) Bubani. l. c. 221.

*Chrysanthemum Leucanthemum* Linn. Sp. Pl. 888. (1753).

Belfield (O. A. Stevens).

*SANTOLINA* "Anguillara (vix, quum eam tantummodo nominaverit." Bubani). Dod. Hist. Stirp. Pempt. II., Bk. III., ch. 27. (1583). Tourn. Inst. 460. (1700).

1179. *Santolina suaveolens* Pursh, Fl. Am. Sept. 520. (1814).

*Matricaria discoidea* DC. Prodr. 6: 50. (1837).

*Matricaria matricarioides* (Less.) Porter, Mem. Torr. Bot. Club 5: 341. (1894).

Leeds, Minnewaukan.

*CHAMAEMELUM* Hippocrates, Morb. Mul. I.: 625. *Ανθεμης* Diosc. 3: 154. *Ανθεμον* Theophr. 7, hist. 13, dicitur *Χαμαιμελον*. *Anthemis* Plin. 22. 21.

*Matricaria* Vaillant; the *Chamomilla* of Linn. is Chamille to-day. Theophr. had no Chamille. Officinis *Chamomilla* is *Anthemis* of Diosc. (Ruell. de Diosc. bk. III., p. 292—1547).

1180. *Chamaemelum vulgare* Hippocr. l. c.; Theophr. Hist. Pl. 1: 7, c. 8. Diosc., 1: 3, c. 145; Dod. Pempt. 257.

*Matricaria Chamomilla* Linn. Sp. Pl. 891. (1753).

Kulm (Brenckle).

*TANACETUM* Brunfels, Herb. Viv. Ic. 250—251. (1531), also Lob. Cusa, Dod. Matth. Ges. Lon. Caes.

1181. *Tanacetum vulgare* Trag. Stirp. 158. (1552), also Eyst.; Grisl.; Linn. Sp. Pl. 1184. (1753).

Turtle Mountains.

1182. *Tanacetum vulgare crispum* DC. Prodr. 6: 128. (1837). Towner.

*ARTEMISIA* Dioscorides 3: 127; Tourn. Inst. 460. (1700); Bauh. Pin. 137. (1620); Fuchs. Stirp. 25. (1549); Dodon. Hist. Stirp. Pemp. 1. 2. 12. (1583).

1183 *Artemisia Forwoodii* S. Wats. Proc. Am. Acad. 25: 133. (1890).

Stem leaves green, glabrate. Pleasant Lake, Devils Lake; Kulm and Emmons County (Brenckle).

1184. *Artemisia Forwoodii* var. *calvens* Lunell.

*Artemisia caudata* var. *calvens* Lunell in Am. Midl. Nat. Vol.

II: 188. (1912). Stem leaves woolly canescent.

Willow City, Leeds, Butte; Antler (Bergman).

1185. *Artemisia dracunculoides* Pursh, Fl. Am. Sept. 742. (1814). Pleasant Lake, St. John; Morton Co.

1186. *Artemisia glauca* Pall.; Willd. Sp. Pl. 3: 1831. (1804). Pingree, Bottineau, Brinsmade, Peninsula of Lake Ibsen.

1187. *Artemisia frigida* Willd. Sp. Pl. 3: 1838. (1804). Leeds.

1188. *Artemisia Absinthium* Theophr. Diosc. Plin.; Linn. Sp. Pl. 848. (1753).

Leeds, Turtle Mountains.

1189. *Artemisia Abrotanum* Linn. Sp. Pl. 845. (1753).

Leeds; La Moure County (Brenckle).

1190. *Artemisia biennis* Willd. Phytogr. 11. (1794).

Leeds.

1191. *Artemisia longifolia* Nutt. Gen. 2: 142. (1818).

Leeds.

1192. *Artemisia gnaphaloides* Nutt. Gen. II: 143. (1818).

Emmons Co.: Fenwick (Brenckle).

1193. *Artemisia rhizomata* A. Nels. Bull. Torr. Bot. Club. 27: 34. (1900).

Leeds.

1194. *Artemisia cana* Pursh, Fl. Am. Sept. 2: 521. (1814).

Sentinel Butte (Brenckle).

1195. *Artemisia tridentata* Nutt. Trans. Am. Phil. Soc. (II.) 7: 398. (1841).

Medora (Bergman).

*PETASITES* Diosc. 4: 108 (*πεταβίδης*); Bauh. Pin. 197. (1620); Fuchs, Hist. Stirp. 370. (1549); Tourn. Inst. 451. (1700).

1196. *Petasites sagittata* (Pursh) A. Gray in Brew. & Wats. Cal. Bot. I: 407. (1876).

*Tussilago sagittata* Pursh, Fl. Am. Sept. 332. (1814).

- Nardosmia sagittata* Hook. Fl. Bor. Am. I: 307. (1833).  
Turtle Mountains, Pleasant Lake.
- ARNICA* Fehr. Rupp. Jen. 141. (1726). Linn. did not consider it, called it *Doronicum*.
1197. *Arnica fulgens* Pursh, Fl. Am. Sept. 2: 527. (1814).  
Dunsieth; Dickinson (Cl. Waldron).
- SENECIO* Plin. Hist. 468: 10; Matth. Comm. 495. (1554);  
Less.; Tour. Inst. 456. (1700); Linn. Gen. 251. (1737) = *Erigeron*  
of the Greeks.
1198. *Senecio integerrimus* Nutt. Gen. 2: 165. (1818).  
Butte, Peninsula of Lake Ibsen.
1199. *Senecio perplexus* A. Nels. Bull. Torr. Bot. Club 27:  
271. (1900).  
Minot, Dunsieth, Leeds; Dickinson (Cl. Waldron).
1200. *Senecio perplexus dispar* A. Nels. Man. Rocky Mts.  
Fl. 580. (1909).  
*Senecio dispar* A. Nels. l. c. 272. (1900).  
Dunsieth.
- [1201. This number has been used for *Cheirinia elata*, next  
after 518, Vol. IV. 411. (1916).]
1202. *Senecio columbianus* Greene, Pittonia III: 170. (1897).  
*Senecio atriapiculatus* Rydb. Mem. N. Y. Bot. Gard. I: 442.  
(1900).  
Butte; Valley City (O. A. Stevens).
1203. *Senecio Purshianus* var. *viridescens* Lunell in Am.  
Mid. Nat. Vol. I: 207. (1910).  
Leeds, Butte, Dunsieth, Minot (the last probably distinct).
1204. *Senecio Plattensis* Nutt. Gen. 2: 165. (1818).  
Leeds, Butte, Thorpe, Towner.
1205. *Senecio manitobensis* Greenman, in the Ottawa Nat-  
uralist, Vol. 25.: 117. (1911).  
"McHenry Co.: Sand Hills, July 13, 1911, J. Lunell, no 24.  
(hb. Gray)."
1206. *Senecio pseud aureus* Rydb. Bull. Torr. Bot. Club 24:  
298. (1897).  
Leeds, Butte, Minnewaukan.
1207. *Senecio suavis* Lunell in Am. Mid. Nat. Vol. II:  
125. (1911). Very closely related to *S. densus* Greene, Pittonia  
IV: 226. (1900), but Dr. Greene said, when he saw the type in my  
herbarium, that this was a species unknown to him. Pleasant Lake.

1208. *Senecio palustris* (Linn.) Hook. Fl. Bor. Am. I: 334. (1833).

*Cineraria palustris* Linn. Sp. Pl. ed. 2: 243. (1763).

Leeds, Peninsula of Lake Ibsen, Rolette.

1209. *Senecio McDougallii* Heller, Bull. Torr. Bot. Club 26: 592. (1899).

Pleasant Lake, Dunsieith, Turtle Mountains.

*ARCION* (ἄρχειον) Diosc. 4: 107, Plin. 25. 9. *Personata* 21. 27. *Απαρινη* Theophr. n. pl. 7. 14. *Lappa* Tourn. 256. (1700). *Arctium Lappa* Linn. 243. (1737). *Lappa* was among the Romans the general name for plants some part of which was adherent.

1210. *Arctium minus* (Fuchs) Bubani ex Schk. Handb. 3: 4317. (1803); Tourn. 450. (1700).

*Lappa minor* DC. Fl. Fran. 4: 77. (1803).

Leeds, Devils Lake, Pleasant Lake; Kulm (Brenckle).

*CIRSIIUM* (Κίρβιον) Dioscorides 4: 119; Tourn. 447. (1700). *Carduus* Linn. Gen. 244. (1737).

1211. *Cirsium lanceolatum* (Linn.) Scop. Fl. Carn. ed. 2, 2: 130. (1772).

*Carduus lanceolatus* Linn. Sp. Pl. 82. (1753).

Kulm (Brenckle).

1212. *Cirsium nebraskense* (Britton) Lunell in Am. Mid. Nat. Vol. II: 301 (1912).

*Carduus nebraskensis* Britton, Ill. Fl. III: 487. (1898).

To include var. *discissum* Lunell, in A. Midl. Nat. I. c.

[Not *Carduus Flodmannii* Rydb. Fl. of Montana. 451 (1900), which has a different pappus].

Leeds, Butte, Pleasant Lake, Devils Lake, Turtle Mountains.

1213. *Cirsium nebraskense* var. *formidosum* Lunell, in Am. Mid. Nat. Vol. III: 143. (1913).

Minot.

1214. *Cirsium megacephalum* (A. Gray) Cockerell, Univ. Mo. Stud. Sci. 2<sup>2</sup>: 254. (1911).

*Cnicus undulatus megacephalus* A. Gray, Proc. Am. Acad. 10: 24. (1874).

*Carduus megacephalus* Smyth, Trans. Kans. Acad. 16: 160. (1899).

Pleasant Lake, Steele.

1215. *Cirsium muticum* Michx. Fl. Bor. Am. II: 89. (1803). Turtle Mountains.



1216. *Cirsium arvense* var. *horridum* Wimmer & Grabowski, Fl. Silesiaca II: 92. (1828).

Leeds, and everywhere.

1217. 1218. *Epithymum indecorum* and *E. Gronovii* to be found next after No. 844, *E. Coryli*, in Vol. IV: 511. (1916).

*LEUCACANTHA* (Λευκαάνθη) Diosc. 3. 19. Παταδοῦβα Theophr. h. p. 6. 5. Κναιρός, a floris cyaneo colore, Plin. 21: 8, 11. *Centaurea* 263. (1737).

1219. *Leucacantha imperialis* (Hauskn.) Nwd. & Lll.

*Centaurea imperialis* Hauskn. ex. Bornm. Beitr. Bot. Centralbl. XX. II. 68. (1906).

Occasional escape from gardens. Leeds.

1220. *Agalinis aspera* to be found next after No. 927, in Vol. V. 7: (1917).

1221. *Monotropa uniflora* to be found next after no. 793, in Vol IV: 503. (1916).

1222. *Leucacantha Cyanus* (Linn.) Nwd. & Lll.

*Centaurea Cyanus* Linn Sp. Pl. 911. (1753).

Fargo (Cl. Waldron).

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## PLANTS OF MANHATTAN AND BLUE RAPIDS, KANSAS, WITH DATES OF FLOWERING.—I.

BY O. A. STEVENS.

Under this title it is intended to bring together the writer's observations made chiefly during the years 1904 to 1909 inclusive. The list is fairly complete, comprising about 600 species, specimens of practically all of which were collected and are now deposited with the Blue Rapids High School. The dates of flowering refer only to the beginning of the flowering period and are the results of a practise of recording each season the first flowers seen, together with a note on the approximate time which it was believed the species had been in flower. Many of these records are of common plants under constant observation and quite accurate. Others are doubtless subject to correction.

In recording the time of flowering it has seemed advisable to divide the month into periods of five days each, using the days 5, 10, etc.; also giving the exact average date where the dates

for three or more years are similar. For frequency, the terms common, frequent, and occasional have been used. In some cases where it was not well known no statement is made. Unless otherwise stated the plants were considered equally common at both localities. For the convenience of many who may use the list in connection with a manual it has seemed desirable to follow the nomenclature of Britton's Manual,<sup>1</sup> and common names have been included with the idea of making the list useful to as many people as possible.

The territory covered at Blue Rapids takes as a center the farm on which the writer lived until leaving college. Most of the collecting was done on this place or on those immediately adjoining, the greater part within one mile radius, and mostly on the east side of the river. This place is located about four miles northwest of Blue Rapids on the Big Blue River, so that the area studied includes the river bank and woods, the valley, the hillsides and upland prairie. About every half mile deep ravines extend back a mile or more from the valley (or smaller ones more frequently). The wooded lower levels or dry slopes of these are the "dry woods" referred to, while "woods" refers to those close to the river. The natural grassland of the valley is designated as "meadow," that of the upland as "prairie."

The area at Manhattan forty-five miles south of Blue Rapids was covered quite well to a distance of about four miles in all directions from the town. A greater variety of conditions occur and about 150 more plants are reported. The hillsides are higher and more moist; good springs are frequent (rare at Blue Rapids). The larger valley of the Kansas River which the Big Blue joins at this point is quite sandy and furnishes some small areas of drifting sand. Eastward from the town the glacial ice sheet left its characteristic results which seem to furnish a habitat for a number of plants not found elsewhere in the vicinity.

Some prairie plants common at Manhattan which were not seen at Blue Rapids are: *Zygadenus Nuttallii*, *Callirrhoe*, and *Hymenopappus corymbosus*. Many of the other species not recorded for Blue Rapids are likely to be found in its vicinity. Professor A. S. Hitchcock has published<sup>2</sup> records of about 150 additional

<sup>1</sup> Britton, N. L., Manual of the Flora of the Northern States and Canada, ed. 2, 1905.

<sup>2</sup> Flora of Kansas—Distribution by Counties. The Industrialist, 1898.

species for Riley and Pottawatomie counties. The labels on these specimens in the herbarium of the Kansas Agricultural College do not show as a rule the exact locality. It is probable that they fall in three groups which may be of more or less equal size: (1) plants which the present writer did not recognize, (2) rare plants, (3) plants collected outside of the area here covered. The present list includes also about 25 additional species, about half of these being additional for the State.

### PTERIDOPHYTA—Ferns and Fern Allies.

#### Ophioglossaceae. Adder's-tongue Family.

*Botrychium virginianum*<sup>1</sup> (L.) Sw. Rattlesnake Fern.  
Woods. Occasional.

#### Polypodiaceae. Fern Family.

*Pellea atropurpurea* (L.) Link. Cliff-brake.

On rocks in ravines and on hillsides. Frequent.

*Filix gracilis* (L.) Underw. Brittle Fern.

On rocks on moist banks in ravines. Occasional.

*Campsosorus rhizophyllus* (L.) Link Walking Fern.

Manhattan. Rare. In one ravine southeast of town.

#### Marsileaceae.

*Marsilea vestita* Hook & Grev.

Manhattan. Once collected in water in roadside ditch.

#### Equisetaceae. Horsetail Family.

*Equisetum arvense* L. Field Horsetail.

Wet banks. Occasional.

*Equisetum hyemale* L. Scouring Rush.

Wet banks, low fields, etc. Common.

*Equisetum laevigatum* A. Br.

Occasional at Manhattan.

### SPERMATOPHYTA. Seed Plants.

#### Pinaceae. Pine Family.

*Juniperus virginiana* L. Red Cedar.

Rocky banks and hillsides. Frequent. Also planted. Mar.

15. (17).

<sup>1</sup> Specific names have been decapitalized according to the rules now most generally followed.

**Typhaceae.** Cat-tail Family.

*Typha latifolia* L. Broad-leaved Cat-tail.

Wet places. Frequent. June 10.

**Sparganiaceae.** Bur-reed Family.

*Sparganium eurycarpum* Englem. Broad-fruited Bur-reed.

Wet places. Occasional at Manhattan.

**Naiadaceae.** Pondweed Family.

*Zannichellia palustris* L. Horned Pondweed.

Manhattan. In water, especially in old river channel.  
Frequent. May 5.

**Alismaceae.** Water Plantain Family.

*Alisma Plantago-aquatica* L. Water Plantain.

River margins, etc. Frequent.

*Sagittaria latifolia* Willd. Broad-leaved Arrow-head.

River margins, etc. Common. Aug. 5.

*Sagittaria ambigua* J. G. Smith.

Manhattan. Once collected, June 30.

**Gramineae.** Grass Family.

*Tripsacum dactyloides* L. Gama Grass.

Meadows. Occasional. June 5 (6).

*Andropogon scoparius* Michx. Little Blue-stem.

Prairies and hillsides. Common. Aug. 10.

*Andropogon furcatus* Muhl. Big Blue-stem.

Meadows and lower hillsides. Common. Aug. 5 (7).

*Sorghastrum avenaceum* (Michx.) Nash. Indian Grass.

Prairies and hillsides. Common. Aug. 15 (17).

*Sorghum halepense* (L.) Pers. Johnson Grass.

Manhattan. Fields and roadsides. Occasional.

*Paspalum ciliatifolium* Michx.

Manhattan. Frequent in sandy soil.

*Eriochloa punctata* (L.) W. Hamilt.

Manhattan. Once collected in street.

*Syntherisma linearis* (Krock.) Nash. Small Crab Grass.

Dry fields. Frequent. July 20.

*Syntherisma sanguinalis* (L.) Dulac. Large Crab Grass.

Fields. Common. June 30 (28).

*Echinochloa Crusgalli* (L.) Beauv. Barnyard Grass.

Fields, especially in low places. Common. June 15.

*Panicum capillare* L. Witch Grass.

Fields. Common. July 25.

*Panicum cognatum* Schultes. Fall Witch Grass.

Manhattan, in sandy soil. July 15.

*Panicum proliferum* Lam. Sprouting Crab Grass.

Fields, especially in low ground. Common. Aug. 5.

*Panicum virgatum* L. Switch Grass.

Meadows. Common. July 25.

*Panicum scribnerianum* Nash.

Prairies. Common. May 15.

*Panicum scoparium* Lam.

Manhattan. Occasional in dry soil.

*Chaetochloa glauca* (L.) Scribn. Yellow Foxtail. Pigeon Grass.

Fields, etc. Common. June 30 (29).

*Chaetochloa viridis* (L.) Scribn. Green Foxtail.

Fields, etc. Common. June 5 (5).

*Chaetochloa italica* (L.) Scribn. Italian Millet.

Occasionally escaped from cultivation.

*Cenchrus tribuloides* L. Sand-bur.

Especially in sandy soil. Common. July 20.

*Homalocenchrus virginicus* (Willd.) Britton. White Grass.

Woods and along streams. Common. Aug. 5.

*Homalocenchrus oryzoides* (L.) Poll. Rice Cut-grass.

Woods and along streams. Frequent. July 25.

*Phalaris arundinacea* L. Reed Canary Grass.

Manhattan. Occasional in wet places east of town.

*Aristida oligantha* Michx. Wire Grass.

Dry soil. Common.

*Aristida basiramea* Engelm.

Manhattan. Occasional in dry soil.

*Stipa spartea* Trin. Porcupine Grass.

Prairies. Common. May 20.

*Muhlenbergia sobolifera* (Muhl.) Trin.

Once collected in a ravine southwest of Manhattan.

*Muhlenbergia mexicana* (L.) Trin.

Woods. Common.

*Muhlenbergia racemosa* (Michx.) B. S. P.

Woods. Common.

*Muhlenbergia sylvatica* Torr.

Manhattan. Occasional in woods.

*Muhlenbergia diffusa* Willd.

Manhattan. Dry banks and woods. Common.

*Phleum pratense* L. Timothy.

Occasionally escaped from cultivation.

*Alopecurus geniculatus* L. Marsh Foxtail.

Moist soil. Frequent. May 15 (13).

*Sporobolus longifolius* (Torr.) Wood. Long-leaved Rush-grass.

Dry banks. Common. Aug. 20.

*Sporobolus vaginaeflorus* (Torr.) Wood. Sheathed Rush-grass.

Dry roadsides, etc. Common. Flowers late.

*Sporobolus neglectus* Nash. Small Rush-grass.

Dry roadsides, etc. Common.

*Sporobolus cuspidatus* (Torr.) Wood. Prairie Rush-grass.

Dry hills. Common. July 20.

*Sporobolus cryptandrus* (Torr.) A. Gray. Dropseed Grass.

Dry soil. Frequent. June 15.

*Sporobolus heterolepis* A. Gray. Northern Dropseed.

Prairies. Occasional.

*Cinna arundinacea* L. Wood Reed Grass.

Woods. Occasional.

*Agrostis alba* L. Redtop.

Occasionally escaped from cultivation.

*Agrostis perennans* (Walt.) Tuckerm. Thin Grass.

Woods. Occasional.

*Agrostis hyemalis* (Walt.) B. S. P. Rough Hairgrass.

Prairies, meadows or dry soil. Common. May 30.

*Calamovilfa longifolia* (Hook.) Hack. Long-leaved Reed Grass.

Manhattan. Sandhills.

*Spartina cynosuroides* (L.) Willd. Slough Grass.

Moist ground. Common. Aug. 10.

*Chloris verticillata* Nutt.

Manhattan. Occasional in dry soil.

*Schedonnardus paniculatus* (Nutt.) Trelease.

Prairies and dry soil. Frequent. June 20.

*Bouteloua hirsuta* Lag. Small Grama Grass.

Prairies. Common. July 25.

*Bouteloua oligostachya* (Nutt.) Torr. Larger Grama Grass.

Prairies, especially in the lower places. Aug. 25.

*Atheropogon curtispendus* (Michx.) Fourn. Prairie Oast.

Prairies and hillsides. Common. July 15 (13).

*Eleusine indica* (L.) Gaertn. Yard Grass.

Dry roadsides, dooryards etc. Manhattan, common;  
Blue Rapids, occasional. June 30 (July 1).

*Bulbils dactyloides* (Nutt.) Raf. Buffalo Grass.

Prairies, Occasional. May 20. Resembles the Grama  
grasses which are commonly confused with it.

*Phragmites Phragmites* (L.) Karst. Reed.

Manhattan. One or two small patches about 6 miles east.  
Wet ground.

*Tricuspis sesleroides* (Michx.) Torr. Purple-top.

Meadows and roadsides. Common. Aug. 10 (11).

*Diplachne fascicularis* (Lam.) Beauv.

Manhattan. Low roadside.

*Eragrostis capillaris* (L.) Nees.

Dry, wooded ravines.

*Eragrostis Purshii* Schrad.

Dry soil, yards and roadsides. Common. June 15

*Eragrostis major* Host. Stink Grass.

Fields and gardens. Common. June 25.

*Eragrostis pectinacea* (Michx.) Steud. Tickle Grass.

Prairies. Frequent. July 15.

*Eragrostis trichodes* (Nutt.) Nash.

Manhattan. Occasional in sandy soil.

*Eragrostis hypnoides* (Lam.) B. S. P.

Mud of river and pond margins. Common.

*Eatonia obtusata* (Michx.) A. Gray.

Meadows and lower parts of prairies. Common. June 5.

*Koeleria cristata* (L.) Pers.

Prairies and dry soil. June 10.

*Melica mutica* Walt.

Woods and wooded banks. Frequent.

*Korycarpus diandrus* (Michx.) Kuntze.

Woods. Occasional. June 30.

*Uniola latifolia* Michx.

Manhattan. Wooded banks. Occasional July 20.

*Dactylis glomerata* L. Orchard Grass.

Occasionally escaped from cultivation.

*Poa pratensis* L. Kentucky Bluegrass.

Roadsides and woods. Common. May 5 (6).

*Poa sylvestris* A. Gray.

Manhattan. Woods. Occasional. May 30.

*Poa compressa* L. Canada Bluegrass.

Occasional. Sometimes mixed with *P. pratensis*. May 30.

*Panicularia nervata* (Willd.) Kuntze. Manna Grass.

Manhattan. Occasional in wet soil.

*Festuca octoflora* Walt. Slender Fescue.

Prairies and dry soil. Frequent. May 20.

*Festuca elatior* L. Meadow Fescue.

Cultivated and frequently escaped.

*Festuca nutans* Willd. Nodding Fescue.

Woods. Frequent. May 10.

*Bromus inermis* Leyss. Hungarian Brome Grass.

Occasional along roadsides.

*Bromus ciliatus* L. Wood Chess.

Woods. Common.

*Bromus tectorum* L. Downy Brome Grass.

Along railroad; once noted at each place.

*Bromus secalinus* L. Cheat. Chess.

Roadsides and in fields of meadow fescue. Common.

*Bromus racemosus* L.

Roadsides. Occasional.

*Bromus arvensis* L. Field Chess.

Roadsides. In 1909 only a few spots were known at Blue.

Rapids. In 1916 this grass had fairly taken possession of the roadsides.

*Agropyron Smithii* Rydb. Western Wheatgrass.

(*A. spicatum* Scribn. & Smith.). Roadsides. Frequent.

June 10 (11).

*Agropyron repens* (L.) Beauv. Quack Grass.

Manhattan. Noted in a spot of *Bromus inermis* along roadside in 1916.

*Hordeum pusillum* Nutt. Little Barley.

Roadsides. Common. May 10 (12).

*Hordeum jubatum* L. Squirrel-tail Grass.

Roadsides. Frequent. May 30 (30).

*Elymus striatus* Willd. Slender Wild Rye.

Wooded banks. Occasional. June 30.



*Elymus virginicus* L. Terrel Grass.

Woods. Common. June 30.

*Elymus canadensis* L. Nodding Wild Rye.

Dry soil, roadsides, etc. Common. June 15 (14).

**Cyperaceae.** Sedge Family.

*Cyperus diandrus* Torr.

Manhattan. Common in wet soil.

*Cyperus inflexus* Muhl.

Blue Rapids. Once collected along the river margin.

*Cyperus Schweinitzii* Torr.

Manhattan. Occasional in sandy soil.

*Cyperus erythrorhizos* Muhl.

Manhattan. River bank.

*Cyperus speciosus* Vahl.

Manhattan. Frequent in wet ground.

*Cyperus strigosus* L.

Moist ground, fields and river banks. Common.

*Cyperus filiculmis* Vahl.

Dry soil, fields and prairies. Common. June 10.

*Eleocharis palustris* (L.) R. & S. Spike Rush.

Wet ground. Frequent.

*Eleocharis acuminata* (Muhl.) Nees.

Wet places.

*Scirpus americanus* Pers. Chair-maker's Rush.

River banks etc. Occasional. May 30.

*Scirpus validus* Vahl. Great Bulrush.

Ponds, ditches, etc. Common. June 10.

*Scirpus atrovirens* Muhl.

Pond margins etc. Common.

*Scirpus lineatus* Michx.

Blue Rapids. Once collected in bed of ravine.

*Puirena simplex* Vahl.

Manhattan. In wet meadow.

*Carex hystericina* Muhl. Porcupine Sedge.

Wet places. May 30.

*Carex trichocarpa* Muhl.

Wet meadows and roadsides. Common.

*Carex lanuginosa* Michx. Woolly Sedge.

Wet meadows. Common at least at Manhattan.

*Carex stricta* Lam. Tussock Sedge.

Moist banks. Common. Apr. 10.

*Carex Davisii* Schwein. & Torr. Davis' Sedge.

Blue Rapids. Once collected along edge of woods.

*Carex oligocarpa* Schk.

Manhattan. Dry wooded banks.

*Carex tetanica* Schk.

Prairies. Common. Apr. 15 (17).

*Carex laxiflora* Lam.

Woods and wooded ravines. Common. Apr. 5.

*Carex pennsylvanica* Lam.

Prairies. Common. Mar. 30 (Apr. 2.).

*Carex varia* Muhl.

Manhattan. Wooded banks. Apr. 10 (8).

*Carex vulpinoidea* Michx. Fox Sedge.

Low ground. Common. May 15.

*Carex sparganoides* Muhl. Bur-reed Sedge.

Meadows and edge of woods. Common. May 5 (6).

*Carex festucacea* Willd. Fescue Sedge.

Prairies and meadows. Common. May 10.

#### Araceae. Arum Family.

*Arisaema Dracontium* (L.) Schott. Green Dragon.

Woods. Common. May 30. Called Jack-in-the-Pulpit, but this name seems reserved for *A. triphyllum*.

#### Lemnaceae. Duckweed Family.

*Spirodela polyrhiza* (L.) Schleid. Greater Duckweed.

Manhattan. On water, often among the rushes. Common.

*Lemna perpusilla* Torr.

Manhattan. Often with the preceeding.

#### Commelinaceae. Spiderwort Family.

*Commelina virginica* L. Day Flower.

Fields and waste places. Common. June 30 (July 2).

*Tradescantia bracteata* Small. Spiderwort.

Meadows and banks. Common. May 20 (19).

*Tradescantia reflexa* Raf.

Especially in sandy soil. Very common at Manhattan; not common in the area covered at Blue Rapids. May 20.

**Pontederiaceae.** Pickerel-weed Family.

*Heteranthera reniformis* R. & P. Mud Plantain.

Manhattan. Occasional in mud or water.

*Heteranthera limosa* (Sw.) Willd. Smaller Mud Plantain.

Manhattan. Occasional in mud or water.

**Juncaceae.** Rush Family.

*Juncus tenuis* Willd. Slender Rush.

Wet places on prairies, meadows, etc. Common.

*Juncus Torreyi* Coville. Torrey's Rush.

Common at Manhattan on sandbars of old river channel.

Once collected along creek bank at Blue Rapids.

**Melanthaceae.** Bunch-flower Family.

*Zygadenus Nuttallii* (A. Gray) S. Wats.

Manhattan. Common on prairies. May 15.

**Liliaceae.** Lily Family.

*Allium canadense* L. Wild Garlic.

Banks; lower parts of hillsides. Frequent. May 25.

*Allium mutabile* Michx. Wild Onion.

Prairies. Common. May 25.

*Nothoscordum bivalve*. (L.) Britton. Yellow False Garlic.

Manhattan. Occasional in meadows. Apr. 20.

*Erythronium albidum* Nutt. White Adder's-tongue or Dog's-tooth Violet.

Moist woods. Frequent. Apr. 10 (8).

*Yucca glauca* Nutt. Bear-grass.

Manhattan. Rocky hillsides and sandhills. Occasional.  
June 5.

**Convallariaceae.** Lily-of-the-Valley Family.

*Asparagus officinale* L. Asparagus.

Occasionally escaped from cultivation.

*Vagnera stellata* (L.) Morong. Star-flowered Solomon's Seal.

Woods of ravines. Common. May 5.

*Salomonina commutata* (R. & S.) Britton. Smooth Solomon's Seal.

Woods. Common. May 30 (June 2).

**Smilacaceae.** Smilax Family.

*Smilax herbacea* L. Carrion Flower.

Thickets and wood margins. Frequent. June 25.

*Smilax hispida* Muhl. Greenbriar.

Woods and thickets. Common. June 5.

**Iridaceae.** Iris Family.

*Sisyrinchium angustifolium* Miller. Blue-eyed Grass.

Prairies. Common. Apr. 25 (26).

**Orchidaceae.** Orchid Family.

*Gyrostachys cernua* (L.) Kuntze. Nodding Ladies' Tresses.

Manhattan. Prairies. Occasional. Aug. 5.

**Salicaceae.** Willow Family.

*Populus deltoides* Marsh. Cottonwood.

Woods, ravines, occasionally on hills and often planted.  
Common. Mar. 30 (Apr. 1).

*Salix amygdaloides* Anders. Peach-leaved Willow.

Moist soil; woods and along creeks. Common. Apr. 20 (19).

*Salix cordata* Muhl. Heart-leaved Willow. Pussy Willow.

Moist Places. Occasional. Apr. 5 (3).

*Salix interior* Rowlee. Sandbar Willow.

River banks and other moist places. Common. May 5 (3).

**Juglandaceae.** Walnut Family.

*Juglans nigra* L. Black Walnut.

Woods. Common. May 5 (5).

*Hicoria minima* (Marsh.) Britton. Bitter Nut.

Woods and wooded ravines. Common. May 30.

**Betulaceae.** Birch Family.

*Ostrya virginiana* (Mill.) Willd. Iron-Wood.

Manhattan. Common on wooded hillsides. Apr. 15 (15).

**Fagaceae.** Beech Family.

*Quercus velutina* Lam. Black Oak.

Manhattan. Common on hills eastward.

*Quercus marylandica* Moench. Black Jack or Barren Oak.

With the preceding.

*Quercus macrocarpa* Michx. Bur Oak.

Woods and hillsides. Common. Apr. 25 (24).

*Quercus acuminata* (Michx.) Houda. Chestnut or Yellow Oak.

Hillsides. Common at Manhattan, occasional at Blue  
Rapids. Apr. 25 (23).

**Ulmaceae.** Elm Family.

- Ulmus americana* L. White Elm.  
Woods. Common. Mar. 10 (11).  
*Ulmus fulva* Michx. Slippery or Red Elm.  
Woods. Common. Mar. 15 (14).  
*Celtis occidentalis* L. Hackberry.  
Woods. Common. Apr. 10 (9).

**Moraceae.** Mulberry Family.

- Morus rubra* L. Red Mulberry.  
Woods. Frequent. May 5.  
*Toxylon pomiferum* Raf. Osage Orange.  
Planted and sometimes escaped. Apr. 25.  
*Humulus Lupulus* L. Hop.  
Woods and thickets. Common. Aug. 5.  
*Cannabis sativa* L. Hemp.  
Manhattan. Occasional along roadsides. July 20 (21).

**Urticaceae.** Nettle Family.

- Urtica gracilis* Ait. Slender Nettle.  
Roadsides, thickets etc. Common. July 5.  
*Urticastrum divaricatum* (L.) Kuntze. Wood Nettle.  
Woods. Common. July 10.  
*Adicea pumila* (L.) Raf. Clearweed.  
Woods. Common. Aug. 5.  
*Boehmeria cylindrica* (L.) Willd. False Nettle.  
Manhattan, eastward. Also the var. *scabra* Porter.  
*Parietaria pennsylvanica* Muhl. Pellitory.  
Woods, hillsides, common. May 25 (25).

**Santalaceae.** Sandalwood Family.

- Commandra pallida* A. DC.  
Prairies and hillsides. Frequent. May 10 (10).

**Polygonaceae.** Buckwheat Family.

- Rumex Acetosella* L. Field Sorrel. Sorrel Dock.  
Fields and roadsides. Occasional. May 5.  
*Rumex venosus* Pursh.  
Manhattan. Occasional in sandy soil. May 10.  
*Rumex altissimus* Wood. Tall Dock.  
Roadsides, etc. Common. May 5 (4).

*Rumex patientia* L. Patience Dock.

Manhattan. Noted in two places along the roadside.  
May 25.

*Rumex crispus* L. Curled Dock.

Fields, roadsides etc. Common. May 25 (23).

*Rumex obtusifolius* L. Broad-leaved Dock.

Roadsides. Occasional. June 10.

*Rumex persicarioides* L. Golden Dock.

Manhattan. Sandy soil, especially along old river channel.

July 15.

*Fagopyrum Fagopyrum* (L.) Karst. Buckwheat.

Cultivated and occasionally escaped.

*Polygonum emersum* (Michx.) Britton.

Low places, sometimes in dry soil. Frequent. July 25 (23).

*Polygonum lapathifolium* L.

Fields, riverbanks etc. Common. June 15.

*Polygonum pennsylvanicum* L.

Fields, riverbanks etc. Common. May 30 (June 2).

*Polygonum longistylum* Small.

Riverbanks, low roadsides etc. Common. July 20 (19).

*Polygonum Persicaria* L. Ladies' Thumb.

Low places in fields, roadsides etc. Common. June 5 (5).

*Polygonum hydropiperoides* Michx.

Manhattan. Once collected in roadside ditch.

*Polygonum Hydropiper* L. Water Pepper.

Blue Rapids. Once collected along riverbank.

*Polygonum punctatum* Ell.

Woods and wet places. Common. June 30.

The name Smartweed is often applied to any of the eight species preceeding, and Knotweed to the five following.

*Polygonum virginianum* L.

Woods. Occasional. July 30.

*Polygonum aviculare* L. Doorweed.

Dooryards, roadsides, or other trodden soil. May 25 (24).

*Polygonum littorale* Link.

Dry roadsides. Common.

*Polygonum ramosissimum* Michx. Bushy Knotweed.

Roadsides. Common. July 30.

*Polygonum tenue* Michx. Slender Knotweed.

Blue Rapids. Prairie.

*Polygonum Convolvulus* L. Black Bindweed. Wild Buckwheat.

Field and roadsides. Common. May 20 (20).

*Polygonum scandens* L. Climbing False Buckwheat.

Thickets. Common. Aug. 15.

### Chenopodiaceae. Goosefoot Family.

*Chenopodium album* L. Lambsquarters.

Fields, roadsides etc. Common. May 30 (30).

*Chenopodium pratericola* Rydb. Field Goosefoot.

Fields, roadsides etc. Common. This is *C. Berlandieri* of Hitchcock's list. The description<sup>1</sup> of this new species, the type of which is from Riley county seemed to clear up a troublesome point; but judging from Standley's recent revision<sup>2</sup> of the group, there may be still other species to report.

*Chenopodium leptophyllum* (Moq.) Nutt. Narrow-leaved Goosefoot.

Dry soil. Frequent.

*Chenopodium boscianum* Moq.

Woods and thickets. Common. July 25.

*Chenopodium hybridum* L. Maple-leaved Goosefoot.

Edges of woods and waste ground. Common. July 20 (21)

*Chenopodium ambrosioides* L. Mexican Tea.

Manhattan. Occasional. Dry roadsides and waste ground.  
July 20.

*Cycloloma atriplicifolium* (Spreng.) Coult. Tumbleweed.

Manhattan. Occasional in sandy soil. June 15.

*Monolepis nuttalliana* (R. & S.) Greene.

Along the railroad tracks. Frequent. Apr. 5.

*Kochia Scoparia* (L.) Roth. Burning Bush.

Sometimes escaped from gardens.

*Salsola Tragus* L. Russian Thistle.

Dry roadsides. Occasional. June 10.

### Amaranthaceae. Amaranth Family.

*Amaranthus retroflexus* L. Rough Pigweed.

Fields, roadsides, etc. Common. July 15.

*Amaranthus hybridus* L. Slender Pigweed.

Fields, roadsides, etc. Common. Aug. 5.

<sup>1</sup> Bull. Torrey Bot. Club. vol. 39, p. 310, 1912.

<sup>2</sup> N. Am. Flora, vol. 21, part 1, pp. 1-93, 1916.

*Amaranthus blitoides* S. Wats. Creeping Pigweed.

Roadsides, yards, etc. Common. May 30 (31). This common name is here proposed.

*Amaranthus graecizans* L. Tumbleweed.

Dry or sandy soil.

*Acnida tamariscina* (Nutt.) Wood. Western Water-hemp.

Fields and low ground. Common. June 20.

*Froelichia gracilis* Moq.

Manhattan. Once collected along railroad. May.

**Phytolaccaceae.** Pokeweed Family.

*Phytolacca decandra* L. Poke. Scape. Pigeon Berry.

Manhattan. Frequent along woods and roadsides. June 20.

**Nyctaginaceae.** Four-o'clock Family.

*Allionia nyctaginea* Michx. Wild Four-o'clock.

Field, roadsides. Common. May 20.

*Allionia lanceolata* Rydb.

Dry roadsides. Occasional.

*Allionia hirsuta* Pursh.

Hillsides and dry soil. Occasional.

**Aizoaceae.** Carpet Weed Family.

*Mollugo verticillata* L. Carpet Weed.

Riverbanks and fields. Common.

**Portulacaceae.** Purslane Family.

*Portulaca oleracea* L. Purslane.

Gardens and fields. Common. June 20.

**Caryophyllaceae.** Pink Family.

*Agrostemma Githago* L. Corn Cockle.

Along railroad. Occasional.

*Silene stellata* (L.) Ait. Starry Campion.

Wooded banks. Common. June 25.

*Silene antirrhina* L. Sleepy Catchfly.

Fields and waste places. Common. May 20 (20).

The var. *divaricata* Robinson collected east of Manhattan.

*Saponaria officinalis* L. Bouncing Bet.

Occasionally escaped from gardens. June 30.

*Vaccaria Vaccaria* (L.) Britton. Cowherb. Pink Cockle.

Manhattan. Once collected along the railroad.



*Cerastium vulgatum* L. Mouse-ear Chickweed.

Manhattan. On Agricultural College campus. May 10.

**Anonaceae.** Custard-apple Family.

*Asimina triloba* (L.) Papaw.

Manhattan. Occasional in wooded ravines eastward.  
Apr. 15 (16).

**Ranunculaceae.** Crowfoot Family.

*Aquilegia canadensis* L. Wild Columbine.

Rocky banks in wooded ravines. Occasional. May 10 (8).

*Delphinium albescens* Rydb. Prairie Larkspur.

Meadows. Common. May 25 (25).

*Delphinium tricorne* Michx. Dwarf Larkspur.

Woods. Occasional. May 5.

*Anemone caroliniana* Walt. Carolina Anemone.

Prairies. Frequent. Apr. 5 (5).

*Anemone cylindrica* A. Gray. Long-fruited Anemone.

Prairies and hillsides. Common. June 15 (16).

*Anemone canadensis* L. Canada Anemone.

Manhattan. Meadows; noted in only two places. May 30.

*Anemone virginiana* L. Tall Anemone.

Wooded ravines and thickets. Occasional.

*Clematis virginiana* L. Virgin's Bower.

Thickets and edges of woods. Occasional.

*Clematis Simsii* Sweet. Leather Flower.

Fields. Frequent. June 25 (24).

*Myosurus minimus* L. Mousetail.

Manhattan. Occasional on prairies. Apr. 5.

*Ranunculus abortivus* L. Kidney-leaved Crowfoot.

Woods and low ground. Common. Apr. 20.

*Ranunculus sceleratus* L. Ditch Crowfoot.

Riverbanks and ditches. Frequent. May 5 (5).

*Oxygraphis Cymbalaria* (Pursh) Prantl. Seaside Crowfoot.

Manhattan. Along old river channel.

*Thalictrum purpurascens* L. Meadow Rue.

Woods. Common. May 30.

Agricultural College,  
North Dakota.

## DISTRIBUTION OF OUR BIRDS IN WINTER.

BY BROTHER ALPHONSUS, C. S. C.

The following species were observed in winter from 1913-14 to 1916-17: Blue Jay, Crow, Red-headed Woodpecker, White-breasted Nuthatch, Snowbird, Downy Woodpecker, Tree Sparrow, Chickadee, Brown Creeper, Song Sparrow, Goldfinch, Screech Owl, Bronzed Grackle, Meadowlark, Cardinal, Hairy Woodpecker, Vesper Sparrow, Pine Grosbeak, Robin, Bluebird, Kildeer, Herring Gull, Sparrow Hawk, Golden-crowned Kinglet, Snowflake, Canada Goose, Tufted Titmouse. Three species not seen during this period were Evening Grosbeak, Hell Diver, Northern Shrike.

The Blue Jay had the largest number of records of all the winter species that were found, 288. During the first season, the Jay fell 10 records below those of the second winter, having as a total 73 records. There was a difference of only one record between the second and the third season, 83 being the highest record for the four winters. In the fourth year, the Jay had only 50 records, January of that winter having had but 10 records, which was an unusually small number for that month. Two periods of absence occurred, one from the 10th to the 17th, the other, from the 22nd to the 30th. During the first period there was zero weather, but during the last seven days of absence the weather was mild. From this I infer that cold was not the cause of these two absences of the Jay during that January.

The records of the Crow for the four years under consideration show as the highest 77, and as the lowest 68. In December, 1916, and in January, 1915, there were 19 records for each month; and curiously enough, in some other years, those months had very high records. In 1915, December had 31 records; in 1914, for the same month there were 30 records. In 1913, January had 26, and in 1914, the same month had 29 records. I think a possible explanation of the small records in December, 1916, and January, 1915, may be had from the fact that Crows move about in large flocks in winter to find favorable feeding places, and may not be seen far from their feeding grounds. Such a feeding place was discovered by the writer in the winter of 1916-17—this was a vegetable garden where decaying plants afforded the Crows food to their liking.

The White-breasted Nuthatch had a record remarkable for

the regularity of its appearance. The lowest record was 42, and the highest, 50; and for each of two years there were 48 records. The total for the four seasons was 188. In the winter of 1916-17, December had 13 records; January, 18; and February, 11; with a total of 42. This species is never present in large numbers, and may on that account be missed, even in its habitat in the woods. I think, too, that this Nuthatch is given much to wandering, especially in winter; and as few observers wander as much as the bird, they are unlikely to find it on many days.

The Red-headed Woodpecker had 51 records the first winter, and 45 the second; there were no records of this species for the last two seasons. These were the only winters in which I found the Red-headed Woodpecker. It seems rather inexplicable that the species should have been seen for the two first seasons, and entirely absent during every other winter. That the two winters when the bird was found were exceptional out of a dozen seems impossible, and even though they were successive it does not appear to the writer that they were necessarily identical in conditions favorable for the Red-headed Woodpecker's remaining here during winter.

The records of the Snowbird for two winters show considerable irregularity. There were 22 records as the difference between the higher and lower of these totals. In the second and the third season the species was quite regular, there being but three records more in one than in the other. The total for the four winters was 137 records. The winter of 1916-17 was the severest, and to this fact, I think, is due the small number of records made that year—23.

Like the Snowbird, the Downy Woodpecker was quite irregular for two winters; the first and the third there was a difference of 28 records. The second and the fourth season show records almost equal—25 and 22. The total for four years was 99 records. It would be interesting to know what are the determining factors in the distribution of this species in winter. Can it be that the Downy Woodpecker is a wanderer and, not being abundant, is therefore often absent in many localities?

The records of the Tree Sparrow are as interesting as they are irregular. Beginning with the highest record, 35, in the first season, there is a decrease between each successive year: 7 the second winter; 13 the third; and 9 the fourth. The four seasons totalled 87 records. I think severe weather and deep snows are the cause of the scarcity of this species; and probably in parts of the north

where snow is less abundant than at Notre Dame, Indiana, the Tree Sparrow is fairly plentiful in winter.

The Chickadee, in winter, is certainly an enigma to the writer. The first and the last season there was comparative regularity; but note the second—60 records, and the third—5 records. The total for the four seasons was 107. This species is more common here in winter than in any other season except autumn. But I cannot account for the smallest record, in the second winter. Like the other wood species that get their food from the bark of trees, the Chickadee wanders about from grove to grove; but even this habit would seem to fail to explain the great disparity between the second and the third season.

The Brown Creeper ranks among the most irregular winter species. The records of the first and the third year are not irregular, but 40 for the second season, and 3 for the fourth, equals the disparity just noted in the case of the Chickadee. And to extend the comparison between these two species, the year of the Creeper's highest record was the Chickadee's lowest. And as nearly all the records of the winter species, during the last severe season, were the smallest, it is likely that the Creeper's appearance only on three days was due to cold weather.

The Song Sparrow has, during the four years that we are studying, established itself as a fairly common winter species. Only during the last season was the bird very rare, with five records. The total for the other three winters was 40 records.

The Bronzed Grackle was quite irregular during the four winters. For the first and the fourth season, the species had a total of only 8 records; in the second, none at all; and in the third, there were 15 records. The total for all the seasons was 23 records. But a single individual was observed at any time during the three winters this grackle was found, and, doubtless, this one bird must have remained on account of some peculiar condition.

The species whose total number of records any winter did not exceed ten, I have classed as rare. These are the Goldfinch, Screech Owl, Hairy Woodpecker, Meadowlark, Cardinal, Vesper Sparrow; Pine Grosbeak, Robin, Bluebird, Killdeer, Herring Gull, Sparrow Hawk, Golden-crowned Kinglet, Snowflake, Canada Goose, Tufted Titmouse. The Goldfinch had a total of 28 records for the four seasons; the Robin 17; the Herring Gull, 8; the Screech Owl and Bluebird, 7; the Snowflake, 13; the Cardinal, 6; the

Hairy Woodpecker, 5; the Meadowlark and Sparrow Hawk, 3; the Vesper Sparrow, Pine Grosbeak, Killdeer, Golden-crowned Kinglet, Canada Goose, and Tufted Titmouse, 1.

## 1913-14

	Dec.	Jan.	Feb.	Total
Blue Jay	25	26	22	73
Crow	22	20	26	68
Red-headed Woodpecker	26	25	0	51
White-breasted Nuthatch	21	19	10	50
Snowbird	16	15	14	45
Downy Woodpecker	15	12	13	40
Tree Sparrow	18	13	4	35
Chicakdee	11	5	7	23
Brown Creeper	6	6	1	13
Song Sparrow	4	4	2	10
Snowflake	0	1	9	10
Goldfinch	7	2	0	9
Screech Ow		1	0	4
Bronzed Grackle	3	0	0	3
Meadowlark	1	1	0	2
Cardinal	0	1	0	1
Hairy Woodpecker	0	1	0	1

Total number of species seen, 17.

## 1914-15

	Dec.	Jan.	Feb.	Total
Blue Jay	30	29	24	83
Crow	26	22	23	71
Red-headed Woodpecker	23	15	7	45
White Breasted Nuthatch	22	20	6	48
Snowbird	7	17	9	33
Downy Woodpecker	1	9	4	25
Tree Sparrow	4	14	11	29
Chickadee	1	3	1	5
Brown Creeper	10	18	12	40
Song Sparrow	7	2	7	16
Goldfinch	5	2	1	8
Screech Owl	1	1	0	2
Cardinal	0	3	2	5
Hairy Woodpecker	0	1	0	1
Vesper Sparrow	1	0	0	1
Pine Grosbeak	1	0	0	1
Robin	0	0	8	8
Bluebird	0	0	3	3
Killdeer	0	0	1	1
Herring Gull	0	0	2	2

Total number of species seen, 20.

## 1915-16

	Dec.	Jan.	Feb.	Total
Blue Jay	30	25	27	82
Crow	31	19	27	77
White-breasted Nuthatch	21	11	16	48
Snowbird	16	8	12	36
Downy Woodpecker	3	4	5	12
Tree Sparrow	8	3	5	16
Chickadee	29	14	17	60
Brown Creeper	9	5	4	18
Song Sparrow	7	4	3	14
Goldfinch	1	1	0	2
Bronzed Grackle	7	1	7	15
Sparrow Hawk	0	1	0	1
Herring Gull	0	1	3	4
Robin	0	0	6	6
Bluebird	0	0	2	2
Meadowlark	0	0	1	1
Golden-crowned Kinglet	1	0	0	1

Total number of species seen, 17.

## 1916-17

	Dec.	Jan.	Feb.	Total
Blue Jay	22	10	18	50
Crow	19	26	24	69
White-breasted Nuthatch	13	18	11	42
Snowbird	3	12	8	23
Downy Woodpecker	12	6	4	22
Tree Sparrow	3	3	1	7
Chickadee	10	6	3	19
Brown Creeper	2	1	0	3
Song Sparrow	2	1	2	5
Goldfinch	2	3	4	9
Bronzed Grackle	5	0	0	5
Sparrow Hawk	1	0	1	2
Screech Owl	1	0	0	1
Hairy Woodpecker	1	1	1	3
Herring Gull	0	2	0	2
Snowflake	0	2	1	3
Bluebird	0	0	2	2
Robin	0	0	3	3
Canada Goose	0	0	1	1
Tufted Titmouse	0	0	1	1

Total number of species seen, 20.

Total number of species seen in four winters, 27.

## LECONTE'S UNPUBLISHED WORKS ON PLANTS.

As part of E. L. Greene's collection of plants, his library, manuscripts, etc., there was left to the University of Notre Dame a set of unpublished, water-colored original drawings, made by John B. Leconte, evidently intended to illustrate his articles written on Violets, Bladderworts, and a monograph of *Gratiola*. These communications were published by the author in the rare volumes I-IV of the *Annals of the Lyceum of Natural History of New York*. 1824-1837). Leconte probably was unable to bear the expense of reproducing these exquisitely colored plants which were life size, and so they were never published. His notes on *Gratiola* are in Vol. I. p. 103, on *Utricularia* in Vol. I, p. 72, and *Viola*, Vol. II, p. 135. The most important work of all his Monograph of the Genus *Viola* in Southeastern Atlantic States, is also absolutely indispensable to the student of Iodography. Rare as the work in the *Annals* is, the original plates unpublished had not even been ever seen by some of Dr. Greene's most intimate friends. When in fact on one occasion one of them asked him to be allowed to reproduce a single critical species, Dr. Greene considered the request almost audacious.<sup>1</sup>

Dr. Greene once told us he came into possession of this unique treasure in a second-hand book-shop in Philadelphia. The collection of drawings numbering 42 had previously been in the hands of Isaac C. Martindale who obtained them when Leconte's effects were auctioned off. Dr. T. Holm, of Washington, informed us that Harvard University has tracings of the illustrations, probably made before Dr. Greene purchased the originals. In several places of Dr. Greene's writings we find references to these plates, and no doubt they helped much to give him such accurate knowledge of our eastern violets, and their identity, a subject in which he was rightly recognized as one of our most careful and exact authorities. He refers to the drawings in Leaflets 1, 2. Because of a reference in Pittonia V, 84, it might be inferred that as early as 1898 he had these; for he states then that he "possesses Leconte's unpublished plates." Another reference is found in Mid. Nat. III. p. 84.<sup>2</sup> seems to point to the supposition that Dr. Greene acquired these drawings subsequent to May 1898. (Vide. Pitt. III, 313 et. seq.)

<sup>1</sup> " . . . I had quite to my satisfaction identified it (*V. affinis*) by LeConte's description quite anterior to the time when I saw the unpublished figures referred to; and that only confirmed my earlier determination of it."

"Now on arrival in Washington of the LeConte botanical art treasure, as my property, I called Mr. Pollard's attention to these longer and more pointed leaves of this plant, as bringing it nearer than any other of our violets to the poor figure of Hills' *V. obliqua*. I recall that Mr. Pollard more than once came back to study that particular plate and finally to make of me the remarkable request—I do not like to use the less mild term audacious in connection with an old and valued friend—that he be permitted to make a copy of the plate. Doubtless I might have forgotten the whole circumstance of my friend's very special interest in the fine colored plate under which LeConte, now ninety years since had written in pencil: "*V. affinis*" but for his surprising request."

<sup>2</sup> There is also an article on *Ruellia* Vol. I. p. 140, but there are no drawings in the manuscript of this genus.



These remarkable water-colored drawings made and annotated by Leconte himself were undoubtedly intended by him to accompany his monographs in the Annals of the Lyceum of New York referred to. Dr. Greene once told us himself that they were very likely left out because of the great expense of reproduction. There are altogether 25 life size plates of Violets, 10 of Bladderworts, and 7 of *Gratiolae*. Some of the last are unfinished as to coloring, and though we had on various occasions seen this work during Dr. Greene's lifetime, we were ourselves hitherto unaware of this last group of illustrations. There are also penciled notes on the margins of the plates by Dr. Greene himself as to the identity of the plants shown.

Mr. Martindale the former owner of the treasure made the following note on the inside of the front cover of the book: "Purchased at the sale of the Library of Dr. J. LeConte, Phila., 5-1884. They were the original drawings of Major LeConte. Isaac C. Martindale."

It was for some time subsequent to the death of Dr. Greene, Nov. 10, 1915, that these plates had been lost or had disappeared. Diligent search was made for the collection without avail. While cataloguing the periodicals of the Green Library we came upon them quite accidentally hidden in an out-of-the-way place and behind some books on the shelves. Dr. Greene had put them there before leaving on his last trip to Washington; for they were not in the library a week previous to his departure.

After carefully weighing matters from all points of view it has been decided to allow reproductions to be made of the unpublished plates of LeConte. The articles in the Annals of the N. Y. Lyceum will be reprinted and accompanied by actual size photographic copies of the plates 43 in all and one photographic copy of Mr. C. Matindale's note in the original cover. Accompanying the facsimile photographic prints we will aim to give a short résumé of references to them in Dr. Greene's writings. Owing to the limited number of copies that will appear it will be necessary to request the various institutions, academies and individuals to send in requests beforehand for copies by subscription. If a sufficient number are ordered or asked to be reserved the work will be undertaken. The photographs will be made by the most expert artist that can be had for the work from the most sensitive orthochromatic plates. The prints themselves will be made on highly polished linen-backed paper 7 x 10 inches. Another expert artist has consented to color the prints to the original at an extra cost of 30 c. apiece, for those who wish color reproductions. The photographs will be the best that the modern art can obtain, and a sample will be sent to those who wish to examine the nature of the technique, on condition of its immediate return as the cost of making prints is necessarily very expensive. The price is \$25. No copies will be given or made out afterwards. Nor will the work be undertaken unless a sufficient number of subscribers apply. Address:

DIRECTOR OF THE HERBARIUM,  
Notre Dame, Indiana.



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